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D350-748-243TRN
Job Sheet 201057



Part No: D350-748-243TRN

Job Qty: 1 pcs

Part Name: Crosstube Installation, High Aft



Part Weight: 0 lbs

Status: New

Priority: Medium

Job Created: 9/23/19

Job Tracking No:

Due Date: 11/22/19

Created By: Jennifer Renwick

Type: Stock

Description:

Note: DWG REV A IPP Rev:A New Issue LL 12.05.08

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Lead Time	Sign-off
					Setup Hrs	Run Hrs	Workcenter / Supplier	Lead Time		
100	Mori Seiki TL-40 - 1	1 pcs	11/22/19	11/22/19	1.00	3.57	Mori Seiki TL-40 - 1		9-89	662019/10/04
110	QC 2	1 pcs	11/22/19	11/22/19	0.00	0.00	QC 2 - 1			
							QC 2 - 12			
							QC 2 - 14			
							QC 2 - 17			
							QC 2 - 19			
							QC 2 - 2			
							QC 2 - 20			
							QC 2 - 22			
							QC 2 - 23			
							QC 2 - 25			
							QC 2 - 32			
							QC 2 - 33			
							QC 2 - 35			
							QC 2 - 39			
							QC 2 - 4			
							QC 2 - 40			
							QC 2 - 44			
							QC 2 - 45			
							QC 2 - 48			
							QC 2 - 49			
							QC 2 - 50			
							QC 2 - 51			
							QC 2 - 52			
							QC 2 - 57			
							QC 2 - 62			
							QC 2 - 63			

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				QC 2 - 8	DAS	
				QC 2 - 66	66 2019/10/04	
				QC 2 - 64	9-89	
				QC 2 - 65		
				QC 2 - 5		
				QC 2 - 71		
				QC 2 - 73		
				QC 2 - 69	DAS	
120	Mori Seiki TL-40 - 1 - B4B	1 pcs	11/22/19	1.00 3.57	Mori Seiki TL-40 - 1 - B4B	66
130	QC 2	1 pcs	11/22/19	0.00 0.00	QC 2 - 1	9-89
				QC 2 - 12		
				QC 2 - 14		
				QC 2 - 17		
				QC 2 - 19		
				QC 2 - 2		
				QC 2 - 20		
				QC 2 - 22		
				QC 2 - 23		
				QC 2 - 25		
				QC 2 - 32		
				QC 2 - 33		
				QC 2 - 35		
				QC 2 - 39		
				QC 2 - 4		
				QC 2 - 40		
				QC 2 - 44		
				QC 2 - 45		
				QC 2 - 48		
				QC 2 - 49		
				QC 2 - 50		
				QC 2 - 51		
				QC 2 - 52		
				QC 2 - 57		
				QC 2 - 62		
				QC 2 - 63		
				QC 2 - 8	DAS	
				QC 2 - 66	MD 66 BB	
				QC 2 - 64	9-89	
				QC 2 - 65	12/10/2019	
				QC 2 - 5		
				QC 2 - 71		
				QC 2 - 73		
				QC 2 - 69		
140	QC 8	1 pcs	11/22/19	0.00 0.00	QC 8 - 12	
				QC 8 - 14		
				QC 8 - 17		
				QC 8 - 20		
				QC 8 - 25		
				QC 8 - 3		
				QC 8 - 32		
				QC 8 - 33		
				QC 8 - 35		
				QC 8 - 39		
				QC 8 - 4		
				Plex 9/23/19 12:35 PM Dart.Renwick.Jennifer		

				QC 8 - 44	
				QC 8 - 45	
				QC 8 - 49	
				QC 8 - 58	
				QC 8 - 8	
				QC 8 - 9	
				QC 8 - 68	
				QC 8 - 67	
				QC 8 - 1 (A)	DAS
				QC 8 - 47	47 19-10-17
				QC 8 - 40	9-89
				QC 8 - 52	
				QC 8 - 23	
				QC 8 - 57	
				QC 8 - 76	
				QC 8 - 61	
150	Crosstubes - 2 - B4B	1 pcs	11/22/19	0.00 0.81	Crosstubes - 1 - B4B
					Crosstubes - 2 - B4B
					Crosstubes - 3 - B4B
					Crosstubes - 4 - B4B
190	Packaging 3-1 - Stock - B4B	1 pcs	11/22/19	0.00 0.00	Packaging 3 - 1 - B4B
					Packaging 3 - 2 - B4B
					Packaging 3 - 3 - B4B
					Packaging 3 - 4 - B4B
					Packaging 3 - 5 - B4B
					Packaging 3 - 6 - B4B
					Packaging 3 - 7 - B4B
					Packaging 3 - 8 - B4B
					Packaging 3 - 9 - B4B
					Packaging 3 - 10 - B4B
					Packaging 3 - 11 - B4B
					Packaging 3 - 12 - B4B
					Packaging 3 - 13 - B4B
					Packaging 3 - 14 - B4B
					Packaging 3 - 15 - B4B
					Packaging 3 - 16 - B4B
					Packaging 3 - 17 - B4B
					Packaging 3 - 18 - B4B
					Packaging 3 - 19 - B4B
					Packaging 3 - 20 - B4B
					Packaging 3 - 21 - B4B
					Packaging 3 - 22 - B4B
					Packaging 3 - 23 - B4B
					Packaging 3 - 24 - B4B
					Packaging 3 - 25 - B4B
					Packaging 3 - 26 - B4B
					Packaging 3 - 27 - B4B
					Packaging 3 - 28 - B4B
					Packaging 3 - 29 - B4B
					Packaging 3 - 30 - B4B
					Packaging 3 - 31 - B4B
					Packaging 3 - 32 - B4B
					Packaging 3 - 33 - B4B
					Packaging 3 - 34 - B4B

Packaging 3 - 35 - B4B

Packaging 3 - 36 - B4B

200 QC 21 - SA

1 pcs

11/22/19

0.00 0.00

QC 21 - SA - 21

QC 21 - SA - 70

QC 21 - SA - 53

DAS

21

5:35

OCT 2 1 2019

Part Op 100 - TL-40 (Mori Seiki CNC Lathe Large) 1-Cut tube on chop saw, leave extra mat'l for facing and install plugs 350-241
 Descriptions: on both ends. 2-Face both sides of tube. 3- Turn program 02000 section on both side as per folio FB468. 4- Turn program
 03000 section on both side as per folio FB468. 5- Blend transsition lines only with belt sander 60 grit. Folio
 rev: A Dwg rev: A

110 - (QC2- Inspect parts off machine FAI/FAIB)

120 - TL-40 (Mori Seiki CNC Lathe Large) 1- Turn program 04000 section on both side as per folio FB468. 2- Turn
 program 05000 section on both side as per folio FB468. 3- Blend transition lines only with belt sander 60 grit. 4-Scribe
 part # as per Dwg D350-748-243. Folio rev: A Dwg rev: A

130 - (QC2- Inspect parts off machine FAI/FAIB) PERFORME ULTRASONIC MEASUREMENT

140 - (QC8- Inspect parts - second check)

150 - Crosstubes-2 (Crosstubes) 1-Grind machining marks

190 - Identify and stock in kanban rack

200 - (QC21- Final Inspection - Work Order Release)

Job BOM

Part / Item	Component Name	Quantity	Operation
D6021-125	Crosstube Material - 17-4Ph SS	1 pcs (1 ea)	100-Mori Seiki TL-40 - 1

Container

F151690

Job Allocations

Operation	Component Part	Required	Inventory	Allocated
100-Mori Seiki TL-40 - 1	D6021-125	1	31	0

Part Specifications

Specifications could not be found.

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Container No: S219942



Part: D350-748-243TRN

Job No: 201057

Serial No/Batch: S219942

Revision: A

Inspector:

Exp Date:

Instructions:

Date: 10/04/19

⑧

DART AEROSPACE LTD	Work Order:	201057
Description: Crosstube Assembly (AS350/355 High Aft SS)	Part Number:	D350-748-243
Inspection Dwg: D350-748-243 Rev: A		Page 1 of 2

FIRST ARTICLE INSPECTION CHECKLIST

Inspection Sheet Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
SIDE A	2.240	+/-0.005	2.245	✓		Cnc 04
	2.180	+0.005/-0.000	2.183	✓		
	2.180	+0.005/-0.000	2.182	✓		↓
	2.208	+0.005/-0.000	2.213	✓		
	2.234	+0.005/-0.000	2.239	✓		
	2.253	+0.005/-0.000	2.258	✓		
	2.272	+0.005/-0.000	2.277	✓		
	2.299	+0.005/-0.000	2.304	✓		
	0.063	+/-0.010	.063	✓		Cnc 08
	5.25	+/-0.060	5.257	✓		"
	R0.063	+/-0.010	.063	✓		Rg
	R0.50	+/-0.030	.500	✓		Rg
SIDE B	2.240	+/-0.005	2.245	✓		Cnc 04
	2.180	+0.005/-0.000	2.184	✓		
	2.180	+0.005/-0.000	2.181	✓		↓
	2.208	+0.005/-0.000	2.213	✓		
	2.234	+0.005/-0.000	2.239	✓		
	2.253	+0.005/-0.000	2.258	✓		
	2.272	+0.005/-0.000	2.277	✓		
	2.299	+0.005/-0.000	2.304	✓		
	0.063	+/-0.010	.063	✓		Cnc 08
	5.25	+/-0.060	5.256	✓		"
	R0.063	+/-0.010	.063	✓		Rg
	R0.50	+/-0.030	.500	✓		Rg
	124.70	+/-0.060	124.70	✓		Tape

Item	Qty	Part Number	Description
1	-243		
1	X	D350-748-243	CROSSTUBE ASSEMBLY (AS 350/355 HI AFT)
2	1	D6021-125	CROSSTUBE
3	2	D3502-1	SUPPORT
4	2	D5123-7	CLAMP CUSHION
5	1	AETC-1032	INSERT
6	2	MS21920-20	CLAMP
7	1	MS21920-21/22	(PER DART SPEC. MMS21920-20/21/22)
8	1	NAS1149C0383R	WASHER (OR AN960C10)
9	1	NAS1835-3-8	SCREW (OR MS51958-63)
9	AR	PROSEAL 890 B-2	SEALANT, AMS-S-8802 CLASS B-2

GENERAL NOTES:

- 1) MATERIAL: MANUFACTURED FROM D6021-125
FINISHED LENGTH AFTER TURNING = 124.70±0.06 (AFTER BENDING/TRIMMING = 122.70 REF)
- 2) FINISH: PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- 3) TOLERANCE: PER DART QSI 018 UNLESS OTHERWISE NOTED.
WALL THICKNESS ECCENTRICITY PER DART QSI 038 7.2
MIN ALLOWABLE WALL IS -0.020 FROM NOMINAL
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: DART PART NUMBER "D350-748-243" AND BATCH NUMBER ON INSIDE OF CUFF
PER DART QSI 044 6.4 (VIBRATING STYLUS)
- 7) WEIGHT: 28.85 lbs
- 8) PART IS SYMMETRIC ABOUT CENTERLINE. EXCEPT FOR Ø0.290 HOLE.
- 9) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLEND OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE. WHEN DRILLING HOLES EXTREME CARE MUST BE TAKEN AND CAREFUL DEBURRING PERFORMED TO ENSURE A CLEAN HOLE WITH NO CRACKING/CHIPPING/GROOVES.
- 10) TURNING
BLEND OUT ALL EDGES FROM MACHINING LONGITUDINALLY. TRANSITION SHOULD BE SMOOTH. NOTE: ALL HOLES ARE DRILLED AFTER BENDING.
- 11) BENDING
BEND PROGRESSIVELY WITH A MINIMUM OF 7 PASSES PER SIDE. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D. ON TOP HALF OF BEND, AND 8% ON BOTTOM HALF OF BEND.
- 12) MAX AMPLITUDE OF RIPPING ALONG BENT PORTION OF THE TUBE IS 0.030 (ZN A1-3)
- 13) MAX TWIST: WITH TUBE LAYED FLAT ON SURFACE, THE DIFFERENCE BETWEEN CUFF HEIGHTS FROM THE SURFACE MAY BE NO LARGER THAN 0.38 (ZN C1-3).
- 14) ASSEMBLY
TO INSTALL D3502-1 SUPPORT: ABRASE MATING SURFACE OF SUPPORT AND CROSSTUBE WITH 180-GRIT SANDPAPER AND REMOVE RESIDUE WITH MEK (OR EQUIVALENT). APPLY A 0.02" TO 0.05" THICK LAYER OF PROSEAL 890 CLASS B-2 (OR AMS-S-8802 CLASS B-2) SEALANT TO MATING SURFACE OF SUPPORT.
TORQUE CLAMPS 60 TO 80 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING. PRIOR TO PACKAGING, RE-CHECK TORQUE ON CLAMPS AFTER PROSEAL 890 SEALANT HAS CURED FOR 72 HOURS.

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ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 201657

DEO ATTACHED

RELEASED

2015 MAR 18

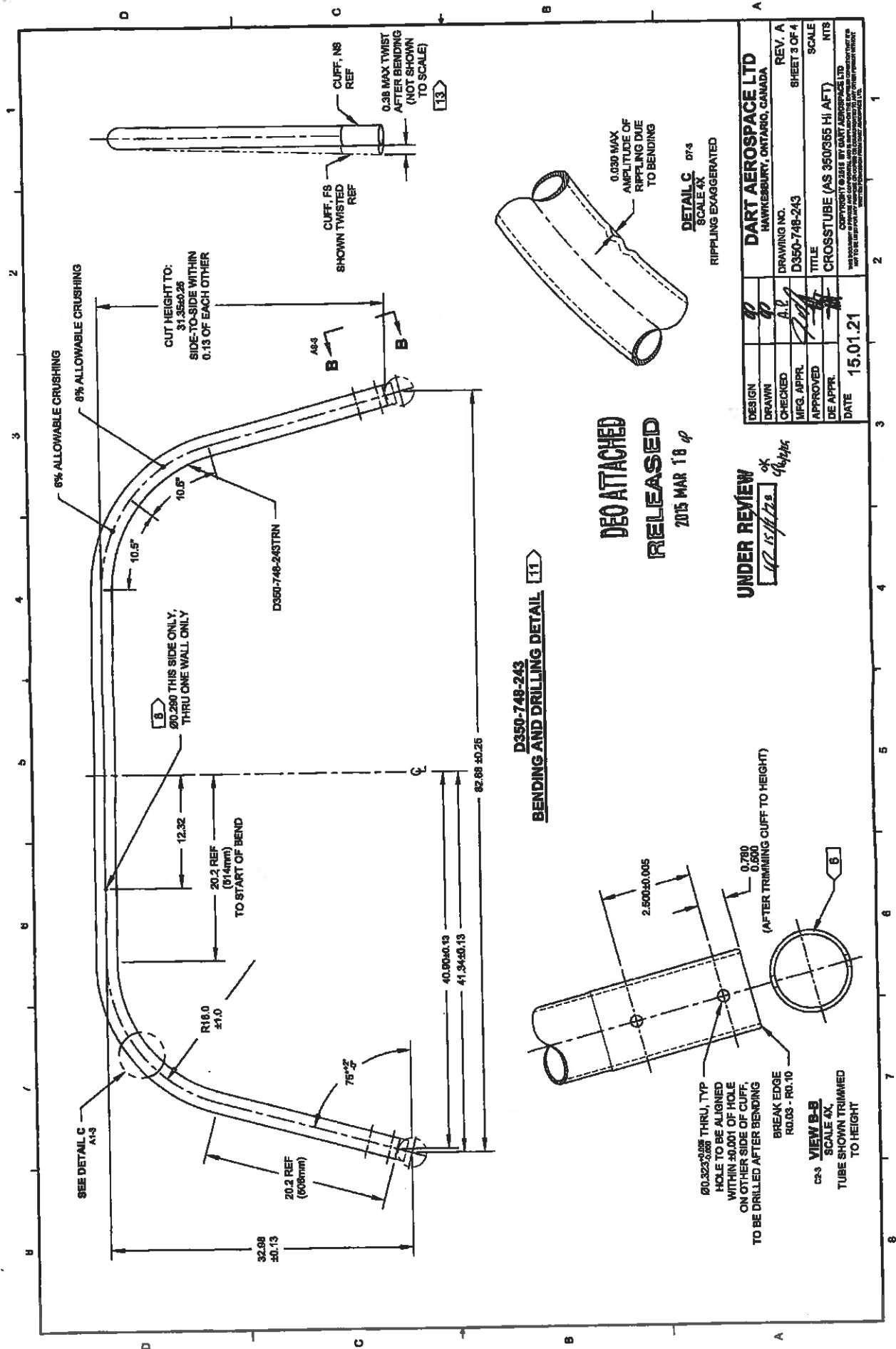
RELEASED

UNDER REVIEW

2015 MAR 18

A	NEW ISSUE	DESCRIPTION	CP	BY	DATE
REV.					
DESIGN					
DRAWN					
CHECKED					
MFG. APPR.					
APPROVED					
DE APPR.					
DATE	15.01.21				

DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	REV. A
DRAWING NO. D350-748-243	SHEET 1 OF 4
TITLE CROSSTUBE (AS 350/355 HI AFT)	SCALE NTS
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DRAWING NO. D350-748-243	TITLE CROSSTUBE	REV. A	DART AEROSPACE LTD ENGINEERING ORDER		D.E.O. NO. D350-748-243-A-1	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN qp	CHECKED AJS		MFG. APPR. [Signature]	APPROVED [Signature]		DE APPR. [Signature]	
DATE 15.11.18	DATE 15.11.18		DATE 11.07.19	DATE FEB 19 2016		DATE 2016.02.19	

AMEND NOTE 2 (SHEET 1) AS FOLLOWS:

2) FINISH: PREPARE SURFACE PER DART QSI 005 4.1.4
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2

OR

POWDER COAT WHITE (4.3.5.2) PER DART QSI 005 4.3

RELEASED
2016-02-26
EN 16-534



Entered: _____ Date: _____

WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

Route update only

NCR No. _____

Job: _____

Part No. _____

DISPOSITION

Rework ☐
Scrap ☐
Use-as-is ☐

DEPARTMENT/PROCESS

Cross tube ☐
Small Fab ☐
Finishing ☐

Skid-tube ☐
Machining ☐
Large Fab ☐

Eng. (Non-AW) ☐
Prod. Eng. Coord. ☐
Rec/Store/Packaging ☐

Engineering ☐
Water Jet ☐
Supplier ☐
Quality ☐

Date: _____

Sequence #: _____

QTY Affected: _____

MRB (QS042)

Description Work Order Deviation

Disposition

Completed By

Lead hand / Supervisor

QC / QA Coordinator

Root Cause

Operator ☐
Manufacturing Process ☐
Equip/Tooling ☐
Handling/Preservation ☐
Material ☐
Product Improvement ☐
Process Improvement ☐
Human Factors ☐

FAULT CATEGORY

Pressure/Forced ☐
Bending ☐
Crushing ☐
Cracks ☐
Crimp/Kink/Ripple/Wave/Twist ☐
Marks/Chatter ☐
Mislabeled ☐
Contamination ☐
Misaligned/off center ☐
BOM/Route ☐
Broken/Damage/Defect ☐
Incomplete/Unclear Instructions ☐
Drill Holes ☐
Fit/Function ☐

Power Loss/Surge ☐
Folio/Program ☐
Grain Direction ☐
Weld ☐
Wrong Stock Pulled ☐
Out of Sequence ☐
Off-set/Set-up ☐
Positioned Wrong ☐
Outside Tolerance ☐
Drawing ☐
Finish ☐
Part Lost/Missing ☐
Misread ☐

Other/Details: _____